

1           1. A method of detecting an HIV-infected cell from a mammal undergoing  
2 combination anti-HIV drug therapy, the method comprising detecting an HIV 2-LTR  
3 circle DNA molecule obtained from a cell of the mammal, wherein the presence of a  
4 2-LTR circle DNA indicates an HIV-infected cell.

1           2. The method of claim 1, further comprising amplifying the DNA molecule  
2 before the detecting step.

1           3. The method of claim 2, wherein the DNA molecule is amplified using  
2 polymerase chain reaction.

1           4. The method of claim 1, wherein the drug therapy comprises administering  
2 to the mammal at least one HIV reverse transcriptase inhibitor.

1           5. The method of claim 4, wherein the drug therapy further comprises  
2 administering to the mammal at least one HIV protease inhibitor.

1           6. The method of claim 1, wherein the drug therapy comprises administering  
2 to the mammal at least one HIV protease inhibitor.

1           7. The method of claim 1, wherein the mammal is an HIV-1-positive  
2 mammal.

1           8. The method of claim 7, wherein the mammal is a human.

1           9. The method of claim 1, wherein the mammal is a human.

1           10. The method of claim 1, wherein the cell is a peripheral blood  
2 mononuclear cell.

1           11. The method of claim 1, wherein cell-free HIV viral RNA cannot be  
2 detected in the blood of the mammal.

1           12. A method of detecting an HIV-infected cell in a mammal, the method  
2 comprising detecting an HIV 2-LTR circle DNA molecule obtained from a cell of a  
3 mammal, wherein cell-free HIV viral RNA cannot be detected in the blood of the  
4 mammal, and wherein the presence of a 2-LTR circle DNA indicates a HIV-infected cell.

1           13. The method of claim 12, further comprising amplifying the DNA  
2 molecule before the detecting step.

1           14. The method of claim 13, wherein the DNA molecule is amplified using  
2 polymerase chain reaction.

1           15. The method of claim 12, wherein the mammal is an HIV-1-positive  
2 mammal.

1           16. The method of claim 15, wherein the mammal is a human.

1           17. The method of claim 12, wherein the mammal is a human.

1           18. The method of claim 12, wherein the cell is a peripheral blood  
2 mononuclear cell.

1           19. A method of detecting an HIV-1-infected peripheral blood mononuclear  
2 cell (PBMC) in an individual, the method comprising  
3           amplifying an HIV-1 2-LTR circle DNA molecule obtained from a PBMC of  
4 an HIV-1-positive individual undergoing combination anti-HIV-1 drug therapy, to  
5 produce an amplified nucleic acid, wherein cell-free HIV-1 viral RNA cannot be detected  
6 in the blood of the individual; and  
7           detecting the amplified nucleic acid, wherein the presence of the amplified  
8 nucleic acid indicates the presence an HIV-infected PBMC.

1           20. A method of claim 1, further comprising obtaining the HIV 2-LTR circle  
2 DNA molecule using an alkaline lysis method.

1           21. A method of claim 3, wherein the primers used for PCR comprise a (-)  
2 strand primer spanning nucleotides 9591 to 9610 of the HXB2 strain of HIV-1, and a (+)  
3 strand primer spanning nucleotides 9650-9669 of the HXB2 strain of HIV-1.

- 1           22. A method of treatment for HIV infection in a mammal, the method  
2 comprising  
3           administering to the mammal one or more anti-HIV agents in an amount  
4 effective to reduce an HIV viral load in the mammal; and  
5           detecting HIV-infected cells in the mammal using the method of claim 1,  
6           wherein treatment is continued until the level of HIV-infected cells falls  
7 below 1 in one million peripheral blood mononuclear cell.